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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,441	07/07/2003	Jong Soo Ko	2013P095	7432

8791 7590 04/18/2006

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EXAMINER

LEVKOVICH, NATALIA A

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,441

Applicant(s)

KO ET AL.

Examiner

Natalia Levkovich

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendments and remarks dated 01/25/ 2006 have been acknowledged by Examiner.

Claim Rejections - 35 USC § 112

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.
3. Claims 1-10 remain rejected under 35 U.S.C. 112, second paragraph, as being unclear for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The amended claim 1 recites 'an external pump wherein the capillary channel and the external pump control a flow of a first fluid and a second fluid such that a first fluid injected via one of the fluid inlet ports flows by natural capillary force and a second fluid injected via another fluid inlet port flows by the external pump'. Since both fluids appears to flow through the same channel connected to the pump, it is not clear what structural elements prevent the first fluid from being driven by the pump. Referring to claim 2, is the site of designation the same as the chamber recited in claim 1?

Claim Rejections - 35 USC § 102

4. The 35 U.S.C. §102(b) rejection of claims 1-4 as being anticipated by Hui Liu et al. (US 20040007275), is withdrawn, in light of the latest amendments.

Claim Rejections - 35 USC § 103

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hui Liu.

Although the microfluidic structure of Hui Liu (discussed in details in the prior Office Action) includes pumps, the reference does not specifically consider the pumps to be external. However, it would have been within the ordinary skill in the art at the time the invention was made to have employed external pump in the modified apparatus of Hui Liu, in order to reduce the complexity of the microfluidic structure.

6. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hui Liu in view of Troian et al. (US 20020150683).

See the appropriate paragraphs of the prior Office Action.

7. Claims 10-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hui Liu in view of Blackburn et al. (US 20030190608).

See the appropriate paragraphs of the prior Office Action.

8. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hui Liu in view of Blackburn and further in view of Troian.

See the appropriate paragraphs of the prior Office Action.

Response to Arguments

9. Applicant's arguments filed on 01/25/ 2006 have been fully considered but they are not persuasive and moot in view of the new grounds of rejection.

Applicant argues that the Hui Liu patent fails to teach the external pump and two inlet ports. In reference to the external pump, see paragraph 5 of the instant Office Action. With respect to the driving forces, see paragraph 2 of the prior Office Action and claim 2 of Hui Liu. In regards to the inlets, as was previously discussed, Hui Liu does teach two inlet ports. For example, Figures 5-7 show inlet port 525 and pump inlet port 551. Figures 9-10 show channel 510 with an unmarked inlet port (in the left section) and three pump inlet port located in zones 905, 605. All the ports are in fluid communication with channel 510.

Applicant declares not to understand what 'positively claimed' means. Examiner comments that 'positively (versus inferentially) claimed / recited' means formally determined in the body of the claim. For example, upon the latest amendment, the external pump is now positively claimed / recited in claim 1, and not in claim 11.

Conclusion

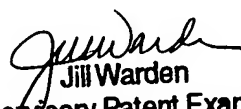
10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Levkovich whose telephone number is 571-272-2462. The examiner can normally be reached on Mon-Fri, 8 a.m.-4p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jill Warden
Supervisory Patent Examiner
Technology Center 1700